

SHORT NOTES

First occurrence of the Pontocaspian invader *Hemimysis anomala* (Sars, 1907) in Belgium (Crustacea: Mysidacea)Tim Verslycke¹, Colin Janssen¹, Koen Lock¹, Jan Mees²¹ Laboratory for Environmental Toxicology and Aquatic Ecology, University of Ghent, J. Plateaustraat 22, B-9000 Ghent, Belgium² Flanders Marine Institute, Victorialaan 3, B-8400 Oostende, Belgium

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Hemimysis anomala (Sars, 1907), initially only known from the Caspian and the Black Sea (1, 2, 3), was introduced into several water bodies in the former Soviet Union to improve fish production. These populations spread until they reached the Baltic. In 1992, this species was found in the coastal waters of Finland (4) and in 1997 it was first observed in the river Rhine, Germany (5). Recently, *H. anomala* was also observed in the Netherlands (6, 7) and it is expected that *H. anomala* will establish populations in other brackish waters along the coasts of Europe (6, 8).

On 12 October 1999, *H. anomala* was retrieved from handnet samples taken from the brackish pond 'Galgenweel'. This pond is situated on the left bank of the Westerschelde estuary, about 20 km upstream of the Dutch-Belgian border, near the harbour of Antwerp. The Galgenweel is a remainder pond which was established after a breach in the dike. In the 1970s it was deepened and its banks were raised (SOSELISA, unpublished data). Now the Galgenweel is a 13 m deep pond with steep banks that is used for recreation. The pond is connected with the Westerschelde estuary through a sluice, which is only used as an overflow when the water level in the pond is too high.

The north-west bank of the Galgenweel was sampled with a handnet during daytime. The net had a mesh size of 0.5 mm and was mounted on a metal frame of 29.0 x 18.5 cm. The net was pushed over the bottom along a 10 m stretch several times. About 50 adult individuals of *H. anomala* were collected. Temperature (13°C), salinity (3.5 PSU) and dissolved oxygen content (10 mg/l) were recorded. *H. anomala* was not found in the Galgenweel during other samplings at the south-west bank (8 October

1999 and 16 November 1999). This may be because this mysid species is restricted to substrata in which holes and crevices are present (5, 6). The north-west bank of the Galgenweel provides such a habitat, whereas the south-west bank does not.

The genus *Hemimysis* belongs to the family *Mysidae*, subfamily *Mysinae*, and consists of only six species (9, 10). *H. anomala* (Fig. 1A) can be distinguished from other species in the genus by the following characteristics: the 3rd, 4th and 5th male pleopod are well developed, the 4th male pleopod is elongated with a long exopodite and a reduced endopodite, the antennal scale is oblong with long plumose setae on the proximal portion of the outer margin and has no spines (1). The quadrately-truncated telson of *H. anomala* shows no trace of an apical cleft and has two long distal spines on both posterior corners and short spines all along the outer margins (Fig. 1B).

H. anomala is an omnivorous feeder, but with a strong feeding preference for cladocerans over copepods. Their invasion could therefore have dramatic effects on the zooplankton composition and abundance (7, 8). While little is known of the competitive ability of *H. anomala*, it seems that their establishment was not prevented by the resident mysid population of *Neomysis integer* (Leach, 1814). During the period of 1992-1997 *N. integer* was retrieved abundantly from the Galgenweel (200-1000 N/m²) during handnet sampling. *H. anomala* was never found in this period (MEES & FOCKEY, personal communication). Recent samplings of the Galgenweel showed a decline in the abundance of the mysid *N. integer*, but further research is needed to clarify the role of *H. anomala* in this decline (VERSLYCKE, unpublished data).

Our observations reveal the occurrence of a new mysid species in Belgium. The presence of *H. anomala* in Belgian waters confirms the possibility that this species may be present in other brackish regions along the coasts of Europe. The hidden life-style of this species makes it difficult to assess its geographic distribution. Further research is needed to elicit the impact of this neozoon on local ecosystems.

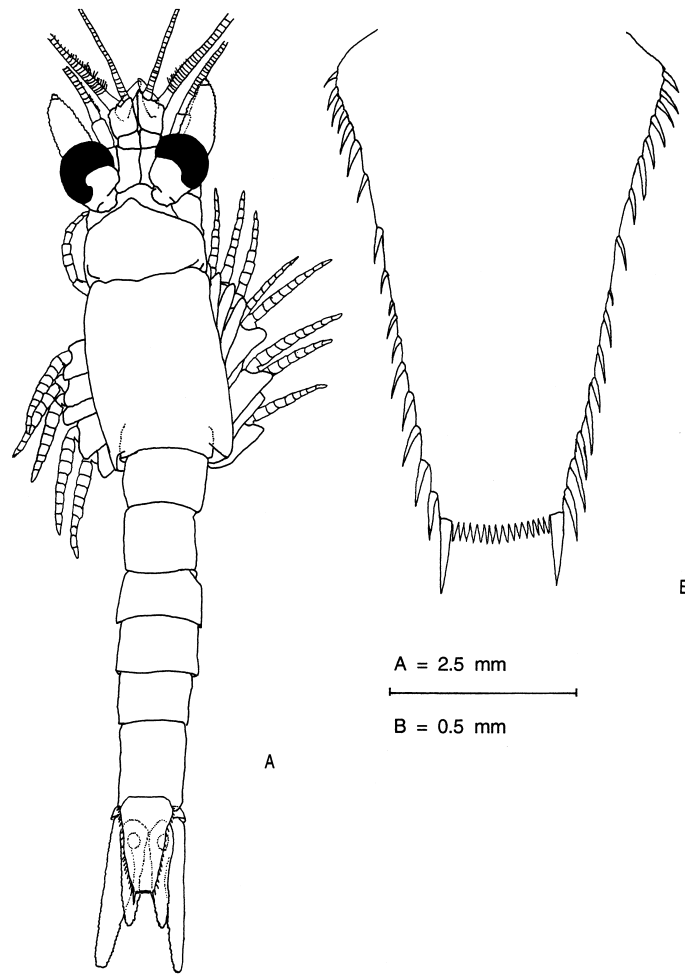


Fig. 1. – *Hemimysis anomala*. A. male; B. telson (FAASSE, 1998).

REFERENCES

1. BACESCU, M. (1954). Crustacean Mysidacea. *Fauna Republicii Populare Romini*, 4 (3): 1-126 (Acad. Rep. Pop. Romine, Bucuresti).
2. LEDOYER, M. (1963). *Hemimysis speluncola* n.sp. mysidace nouvelle des grottes sous-marines obscures. *Rec. Trav. St. Mar. End.*, 30 (45): 77-81.
3. LEDOYER, M. (1989). Les mysidacés (Crustacea) des grottes sous-marines obscures de Méditerranée nord-occidentale et du proche Atlantique (Portugal et Madère). *Marine Nature*, 2 (1): 39-62.
4. SALEMAA, H. & V. HIETALAHTI (1993). *Hemimysis anomala* G.O. Sars (Crustacea: Mysidacea) – Immigration of a Pontocaspian mysid into the Baltic Sea. *Ann. Zool. Fennici*, 30: 271-276.
5. SCHLEUTER, A., H.P. GEISSEN & K.J. WITTMANN (1998). *Hemimysis anomala* G.O. Sars 1907 (Crustacea, Mysidacea), eine euryhalienne pontokaspische Schwebgarnale in Rhein und Neckar. Erstnachweis für Deutschland. *Lauterbornia*, 32: 67-71.
6. FAASSE, M. (1998). The Pontocaspian mysid *Hemimysis anomala* Sars, 1907, new to the fauna of the Netherlands. *Bull. Zool. Mus. Univ. Amsterdam*, 16 (10): 73-76.
7. KETELAARS, H.A.M., F.E. LAMBREGTS-VAN DE CLUNDERT, C.J. CARPENTIER, A.J. WAGENVOORT & W. HOOGENBOEZEM (1999). Ecological effects of the mass occurrence of the Pontocaspian invader, *Hemimysis anomala* G.O. Sars, 1907 (Crustacea: Mysidacea), in a freshwater storage reservoir in the Netherlands, with notes on its autecology and new records. *Hydrobiologia*, 394: 233-248.
8. KELLEHER, B., G. VAN DER VELDE, K.J. WITTMANN, M.A. FAASSE & A. BIJ DE VAATE. (1999). Current status of the freshwater Mysidae in the Netherlands, with records of *Limnomysis benedeni* Czerniavsky, 1882, a Pontocaspian species in Dutch Rhine branches. *Bull. Zool. Mus. Univ. Amsterdam*, 16 (13): 89-96.
9. MAUCLINE, J. (1980). The biology of Mysids. *Adv. Mar. Biology*, 18: 1-369.
10. ALCARAZ, M., T. RIERA & J.M. GILI. (1986). *Hemimysis margalefi* sp. nov. (Mysidacea) from a submarine cave of Mallorca Island, Western Mediterrean. *Crustaceana*, 50: 199-203.

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